CLAIMS

1. A burner arrangement for the combustion of a fuel gas/oxygen mixture, characterized by a body permeable for the mixture whose surface regions defining the free cross section of flow are covered with an oxidation catalyst, by a feeder device arranged on an intake side of the body permeable for the mixture which distributes the mixture over at least essentially the entire active intake area of the intake side and by a layer coordinated with the feeder device and separating the catalytic combustion zone of the permeable body from the mixture inflow, but permeable for it, which serves as a flashback safety.

2. A burner arrangement as in claim 1, characterized by the fact that the permeable layer is at a distance from the intake side of the permeable body.

3. A burner arrangement as in claim 1 characterized by the fact that an electrical ignition device is provided.

4. A burner arrangement as in claim 3, characterized by the fact that the electrical ignition arrangement is arranged on the outlet side of the permeable body.

5. A burner arrangement as in claim 4, characterized by the fact that the ignition device is selected from the group consisting of the following devices: spark gap, resistor, and piezoelectric igniter.

6. A burner arrangement as in claim 1, characterized by the fact that a heat sink is provided on the outlet side of the permeable body which heat sink receives radiant heat from the permeable body.

7. A burner arrangement as in claim 1, characterized by the fact that on the side of the feeder device facing away from the permeable body, another body permeable for the mixture is provided whose surface regions defining the free cross section of flow are also covered with an oxidation catalyst, in which case another layer separating the catalytic combustion zone of the other permeable body from the inflowing mixture, but permeable to it is provided which serves as a flashback safety.

8. A burner arrangement as in claim 7, characterized by the fact that the feeder device assures both the inflow of the mixture to the first named permeable body and also the inflow of the mixture to the other permeable body.

9. A burner arrangement as in claim 7, characterized by the fact that feeder devices are provided for each of the permeable bodies and formed on opposite sides of a separating wall, which displays inlets for the components of the mixture on one or more lateral side or sides with respect to the flow direction through the permeable body.

10. A burner arrangement as in claim 9, characterized by the fact that the separating wall is slanted relative to the direction of flow through the permeable bodies and as a result forms for each permeable body a tapering

inlet space which promotes the distribution of the inflowing gas mixture over the intake area.

11. A burner arrangement as in claim 1, characterized by the fact that the permeable body is a metallic structure.

12. A burner arrangement as in claim 11, characterized by the fact that the metallic structure is selected from the group consisting of: a wire braid, and a metal foam.

13. A burner arrangement as in claim 1, characterized by the fact that the permeable body has a ceramic structure.

14. A burner arrangement as in claim 13, characterized by the fact that the ceramic structure consists of a foam or permeable structure with regular or irregular geometry.

15. A fuel preparation system consisting of a reforming device for transforming an organic fuel into a hydrogen-rich synthetic gas, especially for the operation of fuel cells, characterized by the fact that the reforming device is heated by radiant heat from a permeable body of a burner arrangement as set forth in claim 1.

16. A fuel preparation system as in claim 15, characterized by the fact that each burner arrangement has another permeable body which emits radiant heat to another device of the fuel preparing system, e.g., to an evaporation device or a superheating device or another reforming device.